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CLAIMS

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[Claim(s)]

1. In attachment used to abrasives polish device of form with nozzle which dispatches flow of abrasives powder toward the surface which it is going to grind, A main part of attachment which can be connected with a container holding powder and residue which are the main parts of attachment provided with a lead pipe which was fixed to said nozzle, formed an internal chamber, and was connected with this internal chamber, and were removed from said surface in said lead pipe, Connect with this main part of attachment, engage with the surface which it is going to grind, and it has an edge part which confines this surface, Attachment which includes a flexibility skirt-board-like portion in which an envelopment zone which extends said internal chamber and confines abrasives powder is formed in, and even said container forms a circulation course for flows of abrasives powder through said lead pipe from said surface.
2. Attachment given in the 1st paragraph of Claim which said main part of attachment and said flexibility skirt-board-like portion can remove from said nozzle.
3. Attachment of Claim 2 which formed pipe which it was formed in side attachment wall of said main part of attachment at one so that said main part of attachment might be formed with plastic and said lead pipe might be formed, and was formed in hole which pierces through this side attachment wall and connects said lead pipe with said internal chamber at one in said main part of attachment.
4. Attachment given [ provided with a stop mechanism which fixes said main part of attachment to an axial direction to said nozzle ] in the 2nd paragraph of Claim.
5. Attachment given in the 1st paragraph of Claim which it had combining further ultrasonic abrasives polish device which has outside tube which carries flow of water so that cavitation operation may be added to abrasives powder.
6. The 1st end that can engage with said main part of attachment around said nozzle, The 2nd end that accepts said flexibility skirt-board-like portion, and a plastic member with a hole formed from said 1st end to said 2nd end, Attachment given in the 1st paragraph of Claim provides an arm which formed in an inside of an arm a lead pipe which is open for free passage to said internal chamber which was formed in this plastic member at one, and was formed in this plastic member, and combines a source with said lead pipe in this arm, and a circulation course for drawing of abrasives powder was made to increase.
7. Attachment given in the 1st paragraph of Claim which thrust said main part of attachment into nozzle.
8. Attachment given in the 1st paragraph of Claim which carried out [ \*\*\*\*\* ] of said main part of attachment to nozzle.
9. Attachment given in the 1st paragraph of Claim further provided with stop member fixed to said nozzle so that axial direction movement of said main part of attachment which meets said nozzle might be prevented.
10. Attachment given in the 1st paragraph of Claim which attached said flexibility skirt-board-like portion to said main part of attachment removably.
11. Attachment given in the 10th paragraph of Claim which established a groove and lip-shaped part engaging structure which fix said flexibility skirt-board-like portion to said flexibility skirt-

board-like portion and said main part of attachment removably at this main part of attachment.

12. The 1st axial direction hole that has a diameter with possible eye \*\*\*\*\* in said main part of attachment at said nozzle, Attachment given in the 1st paragraph of Claim which formed said a part of internal chamber by providing the 2nd axial direction hole with a larger diameter than this 1st axial direction hole, and separating an interval from a nozzle part which penetrates said 1st axial direction hole for paries medialis orbitae of this 2nd axial direction hole radially.

13. Attachment given in the 1st paragraph of Claim which prevented rotation to said inclined nozzle of said main part of attachment by having combining an inclined nozzle and providing a cup-like portion which accepts a corresponding point of said inclined nozzle in said main part of attachment.

Attachment comprising given in the 1st paragraph of Claim:

14. A hole which has combining a nozzle with a shoulder and accepts said nozzle with a shoulder in said main part of attachment.

A stop for inner which is formed in this hole and engages with a shoulder member of said nozzle with a shoulder.

15. Attachment given in the 1st paragraph of Claim which provided a radial web towards an inner direction so that said flexibility skirt-board-like portion might not be crushed, and a radial base material might be formed when receiving a suction effect in said flexibility skirt-board-like portion.

16. Attachment given in the 1st paragraph of Claim which it had combining suction sources connected with said lead pipe so that removal of abrasives powder and containment might become easy according to said circulation course.

Suction attachment used to an abrasives polish device of form with a nozzle which dispatches a flow of 17. abrasives powder to the surface which it is going to grind, comprising:

Said nozzle is made tubular, The 1st axial direction hole that is a main part of attachment and has a diameter for inserting said main part of attachment in said tubular nozzle

By having the 2nd axial direction hole with a larger diameter than this 1st axial direction hole, A main part of attachment which changes as keeps an interval radially from said tubular nozzle to which paries medialis orbitae of said 2nd axial direction hole pierces through said 1st axial direction hole, and extends, makes an interval of said radial direction annular and forms a sucking room.

It is formed in this main part of attachment, is open for free passage to said sucking room, and is a suction lead pipe which can be connected with suction sources.

A flexibility edge part possible on the surface which tends to be provided with a skirt-board-like portion removably attached to said main part of attachment, is going to make said skirt-board-like portion hollow mostly so that said sucking room may extend inside said skirt-board-like portion, and it is going to grind into said skirt-board-like portion at engagement.

18. Suction attachment given in the 17th paragraph of Claim which was further provided with an arm formed in said main part of attachment, and one, and formed said suction lead pipe in this arm.

19. it sets to a grinding method which grinds the surface by the end of polishing powder -- turning a nozzle to said surface and with a stage which dispatches an air drive flow of abrasives powder to said surface from said nozzle. Said nozzle is sealed by a flexibility skirt-board-like portion into a portion which is going to clean said surface, A polish method which includes a stage of confining abrasives agent powder and preventing escaping of powder residue of air floating between said surface and said skirt-board-like portion, and a stage of making a container circulating through an air drive flow of abrasives powder, and removing powder residue of air floating.

20. A polish method given in the 19th paragraph of Claim which includes further a stage of adding a suction effect to a confined zone and making it circulation of abrasives powder become easy.

21. it sets to a method of grinding the surface with abrasives powder --- with a stage of removing an affix which dispatches airstream to said surface from a nozzle which carries abrasives

powder, and is formed in this surface. A stage which forms a suction zone in the surroundings of an end of said nozzle to which abrasives powder is dispatched, and by a flexibility skirt-board-like portion's confining the surface which it is going to clean in said nozzle, and sealing it, By defining direction of said nozzle at a mutually different angle to this surface, affecting the confined aforementioned surface by said suction zone, and holding an engagement state over said surface of said skirt-board-like portion, A polish method which includes a stage which excludes abrasives powder residue by a suction effect.

22. By attaching a main part of attachment to said nozzle, and attaching said flexibility skirt-board-like portion to said main part of attachment, A method given in the 21st paragraph of Claim which includes further a stage which confines capacity between said nozzle and said surface which it is going to grind, and is made airtight by confining the surface which it is going to clean.

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[Translation done.]

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

Title of invention The method and device related application which confine and collect abrasives powder from an abrasives polish device An application concerned, (U.S. Request for a Patent 07/No. 900,617, i.e., \*\*\*\*\*, dated June 18, 1992 It is involved in addition of the item Description "method of controlling the aerosol enclosure by which it is generated with an ultrasonic device, and device".) Description of this Description is referred to to this invention. Technical field Generally it is attached to a dentistry polish device (dental polisher) and other associated equipment, and especially such a polish device, or is made by one, and this invention is the residue (residue) of the abrasives powder (abrasive powder) of an air drive.

It is related with the device which reduces the quantity of the abrasives powder which floats in the air by containment \*\*\*\*\*, or is directly distributed in environment.

Background art The abrasives drive polish device is well known for medicine or the field of dentistry, although the affix which is not desirable is removed from hard structure, such as a gear tooth and a bone. For example, sodium bicarbonate powder is used in many cases as a polish medium which is pressurized so that a dental plaque and other affixes may be removed, and is dispatched toward a tooth flank. In such operation, abrasives powder is carried in the airstream dispatched through a small nozzle with the air which pressurized about 30 thru/or 50 psi toward the surface which it is going to clean. It fully pressurizes for 10 minutes although as power is obtained, although this forced air style carries out polish removal of the dirt and removes an affix. Although the abrasives powder of an air drive is effective in removing the affix which is not desirable, it distributes to the nearby surface and device again, and it is clear that it will be in a floating state. In typical polish cleaning operation, abrasives powder residue distributes in the air, and powder or the film of \*\*\*\*\* remains in what is within the limits of 10 thru/or 20 ft from a cleaning operation part. When people leave the zone of polish cleaning, such powder is clothing and footwear and it abrasives powder not only produces insanitary environment, but comes to be carried. The powder which furthermore floats in the air acts as a transportation body which pollutes the zone of still others, when contamination body fluid is carried and it is carried [ powder / this ] by the ventilation system with clothing, footwear, an equipment part, and a wheelbarrow. The disadvantageous point of floating abrasives powder is clear from the above thing.

When it connects with the source of air pressure, the stock polish purifying train which can carry the abrasives powder held in the container through the nozzle of a stock tools end by airstream can be used easily. This instrument can be operated so that it may send toward the surface which is going to clean the abrasives powder of an air drive. A medical practitioner needs to attach a face mask so that inhalation or introduction of powder may be prevented with the assistant of dentistry. Other polish devices are provided with the tubular member with a small inside which carries an air drive abrasives, and the tubular member of the exterior which carries a jet water style to this small tubular member by the same mind. In other ultrasonic structures of a polish device, it is thought that the water and/or the powder which are spouted from a supersonic vibration tip produce the cavitation function which makes removal of an affix (deposit) easy with the abrasives powder of an air drive. Although the abrasives polish device of

other kinds suits cleaning the hard structure surface, such as this, good, it must solve again the peculiar problem described in addition above. By the extreme result of the air pollution in hospital environment, such a device has in practice a possibility that continuous use may be impossible by implementation of OSHA regulation.

It attaches to the end of an abrasives polish device, air drive abrasives powder is accommodated, and the structure of keeping this powder from floating in the air is needed so that clearly from the place described above. Abrasives powder is directly confined in the surface which it is going to attach and clean for the nozzle of an air drive polish device, and it can connect with suction sources so that removal of powder residue may be made easy, but the flexibility protective equipment which does not bar cleaning operation substantially in this case is required. The unit made into throwing away made into the proper price is needed so that attaching to the nozzle of a polish device may be possible again, powder residue may be confined and collected and it can discard easily again. Indication of an invention According to the principle and concept of this invention, the attachment used for the air polish device which holds and collects the abrasives powder which remains in the surface cleaned or ground as residue is described. According to suitable working example of this invention, suction attachment is provided with the plastic bookbinding body which has the shape of a cylindrical shape in most which formed the hole in the end part so that it might \*\*\*\*\* carry out to the tubular nozzle of an air polish device. The hole of a still larger diameter is formed in the other end of this main part of attachment so that an annular sucking room may be formed. The siphon is formed in the side attachment wall of the main part of attachment, and the suction hole which is open for free passage to a sucking room is provided. The siphon is connected with suction sources with a flexibility hose.

It is \*\*\*\*\* carried out of the flexibility skirt-board-like portion made of rubber to the end of the main part of attachment, and is made for a sucking room to extend only the skirt-board-like portion made of rubber substantially. The end of the main part of attachment is provided with the external annular groove which fits in so that the rim of the skirt-board-like portion made of rubber may attach this skirt-board-like portion to the main part of attachment in suitable working example of this invention. When pressing suction attachment to the tubular nozzle of an air polish device, the end of this nozzle is fully inserted into the skirt-board-like portion made of rubber, and this skirt-board-like portion is dispatched toward the surface which is going to seal on the surface and is going to clean the jet of abrasives powder so that powder residue may be confined.

In the method of using the suction attachment of this invention, this suction attachment is attached to the nozzle of an air polish device, and the siphon is connected with suction sources. \*\*\*\*\* and the air drive abrasive soap subsequently pressurized are made to blow off from a nozzle toward said surface on the surface which is going to clean the annular edge of suction attachment, especially the skirt-board-like portion made of rubber. The abrasives residue which surrounds the zone which it is going to clean and floats in the air is kept from leaking the skirt-board-like portion made of rubber. In an important thing, the suction sources which were formed in the sucking room of the main part of attachment, and extended only the skirt-board-like portion made of rubber collect powder abrasives residue, after blowing off toward the surface which is going to clean a powder abrasives. Thus, powder abrasives residue is confined and collected and ambient environment is not polluted. An air polish device is operated along the surface which it is going to clean, and a flexibility skirt-board-like portion is held in the state where it contacted and sealed on this surface, and abrasives powder is kept from leaking it according to the important feature of this invention. An abrasives nozzle is made the direction which makes a various angle to the surface which it is going to clean, and the abrasives powder which holds the state where the circumference contacted this surface and floats in \*\* again is kept from leaking the skirt-board-like portion made of rubber.

Although a suction effect is used in suitable working example, even if this device does not add a suction effect to the skirt-board-like portion made of rubber again, it functions. In another working example, it uses as a mechanism carried so that a used abrasives may be extruded in an abandonment container through an excurrent canal from a tooth flank with the mechanism which



carries abrasives powder for the pneumatic pressure itself to a tooth flank.

The feature and advantage of this invention are still clearer from the following explanation depended on the accompanying drawing about suitable \*\*\*\*\*, The same reference number as the same parts is used through the accompanying drawing.

Brief explanation of the drawings Fig. 1 is a perspective view of this invention suction attachment attached to the nozzle of an air polish machine device.

Fig. 2 is drawing of longitudinal section of the main part of suction attachment removed from the flexibility skirt-board-like portion.

Fig. 3 is an end elevation of the end which the flexibility skirt-board-like portion opened.

Fig. 4 is drawing of longitudinal section of the suction attachment used for the air polish device which grinds or cleans a tooth flank.

Fig. 5 is other end elevations and drawings of longitudinal section of working example of the main part of suction attachment which were used for the inclined nozzle.

Fig. 6 is drawing of longitudinal section of another working example of the main part of attachment with the internal shoulder part stop which can engage with a nozzle with a shoulder.

Fig. 7 is a side view of the stop member bound tight for a nozzle so that the stop for attachment may be formed.

The suction attachment of this invention with the ultrasonic polish device using the ultrasonic tip part spouted on the surface which is going to clean the mixture of water and air drive abrasives powder. It conforms to using for the object for the dentistry of a general form or the polish device for medicine which uses a nozzle for dispatching the flow of air drive abrasives powder to the surface which it is going to grind or clean simply enough. The below-mentioned suction attachment can use being in the state where powdered residue is collected with the nozzle of other forms of conveying an abrasives or the powder of other kinds, and this residue floats in the air, or polluting surrounding environment for the above nozzles with desirable protecting.

Explanation of working example The suction attachment 10 attached to the nozzle end part of the air polish device 14 is shown in Fig. 1. The typical air polish device 14 is connected with about 30 thru/or the 50-psi source 16 of pressure supply of abrasives powder and/or air. In this case, abrasive soap powder is carried to the nozzle 12 through the air polish device 14 with application-of-pressure air. Sodium bicarbonate is typical abrasives powder used for a dentistry polish device. In the case of an ultrasonic polish device, this kind of device is connected with the ultrasonic power source 18 at the water pressure power supply source 20. The nozzle 12 is provided with the outside tube which carries the stream stirred by the supersonic vibration which produces a cavitation function so that cleaning of the surface may be made easy in the air polish device of an ultrasonic system. The inner pipe of the nozzle 12 conveys the air drive abrasives powder dispatched to the basis of a pressure toward the surface which it is going to clean. The water conveyed through an ultrasonic air polish device carries out the operation which removes the thermal energy which cools this device again and is produced with ultrasonic drive mechanism.

The suction attachment 10 equips the skirt-board-like portion 24 of the product [ other end ] made of the rubber of flexibility with the main part 22 of attachment which the end part attached suitably for a nozzle. The siphon 26 is formed in the main part 22 of attachment at one. The siphon 26 is connected with the suction sources 30 with the hose 28. The suction unit which can generally be used for dentistry operation and medicine operation is suitable to use as the suction sources 30 by this invention. Although not illustrated, the quantity of the suction effect which adds a suction effect manually, is removed using a switch or a control device, or is added to the suction attachment 10 during the use can be adjusted. Although not shown in Fig. 1, the end of the nozzle 12 projects in the flexibility skirt-board-like portion 24 through the main part 22 of attachment. The flexibility skirt-board-like portion 24 forms the airtight enclosure of a cylindrical shape, when surface press is carried out so that air drive abrasives powder may be confined. The residue of abrasives powder is confined and collected through the siphon 26, and is collected to the suction sources 30. When using for the device which spouts water toward the surface which it is going to clean, water and fog are removed via the suction sources 30 with powder residue. Fig. 2 shows the structural feature of the suction attachment 10 much more in detail. The main

part 22 of attachment is good to be formed with a high-density polyethylene plastic by a cartridge. The hole 34 which has a diameter which becomes eye \*\*\*\*\* in the annular nozzle 12 is formed in the nozzle inlet end of the main part 22 of attachment. Although the 2nd hole 36 is adjusted to an axial direction and formed in the 1st hole 34, it has a larger diameter than the 1st hole 34. The 2nd hole 36 forms an annular sucking room in the surroundings by making it larger than the outer diameter of the nozzle 12. The siphon 26 is formed in one and equips the main part 22 of attachment with the suction hole 38. The suction hole 38 is open for free passage to the sucking room which formed the side attachment wall of the main part 22 of attachment by the hole 36 of the large diameter pierced and prolonged. When connecting the suction sources 30 with the siphon 26, this siphon is prolonged in the annular sucking room formed by the hole 36, and acts like the after-mentioned. The main part 22 of attachment of the suction attachment 10 is further provided with the annular groove 40 formed in the sucking room end of the main part 22 of attachment for attachment of the flexibility skirt-board-like portion 24.

The flexibility skirt-board-like portion 24 consists of materials of the kind of flexible rubber or others so that it may have advanced flexibility. The flexibility skirt-board-like portion 24 is provided with the rim 42 for inner which fits in in the annular groove 40 of the main part 22 of attachment in suitable working example.

With this structure, it is fixed promptly, and the flexibility skirt-board-like portion 24 is airtightly held on the main part 22 of attachment, and it seals the edge part 32 of the skirt portion 24 to the surface. The zone which is going to grind the air polish device nozzle 12 by such a structure can be crossed, it can rotate so that the flow of abrasives powder may be dispatched or it may spray, or it can move to the surroundings by other methods. The groove 40 or the rim 42 can make reverse formation into the main part 22 of attachment, and the skirt-board-like portion 24. As it indicates Fig. 2 that the flexibility skirt-board-like portion 24 increases the surface area made profitably like although shape is generally a cylindrical shape, a taper may be attached outward. The flexibility skirt-board-like portion 24 is extended on the surface which is going to grind the annular sucking room formed from that of the hole 36 of a large diameter. The flexibility skirt-board-like portion 24 is provided with the annular edge part 32 which contacts again the surface which it is going to clean. The skirt-board-like portion 24 is provided with the web 44 prolonged in some direction of a radial direction, and when some rigidity is given and a suction effect is added to the suction attachment 10, the cylindrical shape side attachment wall of a skirt-board-like portion is kept from furthermore being crushed.

The flexibility skirt-board-like portion which suited using for this invention good, The product made from a young dental MANUFAKUCHUA ring (Young Dental Manufacturing) located in Earth City, Missouri, U.S., "it is obtained as accessories of a FUROFUI angle (Prophy Angle) device. Other flexibility skirt-board-like portions used for this invention have a thing made from FURESENTO dental MANUFAKUCHUA ring KAMUPANI (Crescent Dental Manufacturing Company) of Lyon, Illinois, U.S. The flexibility skirt-board-like portion which formed the profit angle device needs to remove a thicket bottle after this, therefore the remaining holes can be extended and it can \*\*\*\*\* carry out to the end of the main part 22 of attachment. In other flexibility skirt-board-like portions, it must change by the following procedure. As for punching Lycium chinense, a hole is made into the portion of the product made of rubber "profit cup" it was made to get into an edge with a profit (Prophy) angle exactly. An annular part is generated so that an abrasive soap pipe may be prolonged in the flexibility skirt-board-like portion of a profit cup by this procedure.

When generating specially so that it may use for the main part 22 of attachment, the flexibility skirt-board-like portion 24 can be provided with the structure of the rim 42 shown in Fig. 2 and Fig. 3, and others. It is good for a person skilled in the art to use the rubber or the plastic of transparent flexibility so that and the operator of the air polish device 14 can observe a cleaning operation of the zone included in the flexibility skirt-board-like portion 24 in practice.

Use of the suction attachment 10 is shown with cleaning or polishing the surface of the gear tooth 50 in Fig. 4 with the air polish device 14. It carries out [ \*\*\*\*\* ] of the main part 22 of attachment to the nozzle 12, and can be made to perform airtight connection. The nozzle 12 is provided with the sucking room 36 which pierces through the main part 22 of attachment,

extends, and is open for free passage to the suction hole 38 of the siphon 26 around it. The flexibility skirt-board-like portion 24 pushes in only a distance required for an operator to locate the main part 22 of attachment in the distance of the request of the tip part of the nozzle 12 from a tooth flank to the tubular nozzle 12, while it had made the gear tooth attach. The flexibility skirt-board-like portion 24 is ahead energized with the device 14, the edge part 32 attaches it to the surface of the gear tooth 50, seals it, and it has prevented the break through of air drive abrasives powder. Only a short distance (about 1 thru/or 3 mm) separates an interval from the edge part 32 of the flexibility skirt-board-like portion 24, and the end or the tip 54 of the nozzle 12 generates an action chamber between the nozzle tip 54 and the tooth flank 50. For this reason, the edge part 32 of the flexibility skirt-board-like portion 24 is made to engage with the tooth flank 50, while making various angles, rotating and rocking or carrying out orientation of the air polish device 14 and the nozzle 12 to the tooth flank 50, and it can keep sealed.

Subsequently, an operator precedes moving to other surface zones which are going to clean the edge part 32 of the skirt portion 24, and intercepts the flow of abrasives powder with a manual operation control device (not shown), and. In addition, the operation except the powder or residue which floats in the air in the containment zone 52 which remains is continued by suction sources. When powder residue is confined and it removes thoroughly from the zone 52, it raises to other surface zones which are going to grind the air polish device 14 and the suction attachment 10, or moves by the other methods. The circulation course which returns from the end of the nozzle 12 to a tooth flank again at the siphon 26 so that clearly from Fig. 4 exists. The suction sources 30 connected with the siphon 26 raise circulation of consumption abrasives powder for the removal and containment in the suction sources 30.

This invention suits easily removing abrasives powder and an aerosol contaminant without using suction sources. That is, the pipe 26 can be connected with a container so that powder and aerosol residue may be collected without releasing this to the atmosphere, without connecting the siphon 26 with suction sources. In the operation mode by this transformation, the application-of-pressure airstream which comes out of the nozzle 12 acts so that it not only grinds a tooth flank with powder, but powder residue and an aerosol contaminant may be carried to a container through the excurrent canal 26 again. Application-of-pressure airstream generates the circulation course to a container through the outlet pipe 26 after a tooth flank from the nozzle 12 without using suction sources. In this operation mode, a container needs the filtration opening to the atmosphere which holds a circulation course without pressurizing a container and producing the release to the atmosphere of a contaminant by the free passage of air again.

The bag with a filter or enclosure connected with the excurrent canal 26 via the pipe or the hose may be sufficient as the container itself.

Fig. 5 shows the main part 60 of attachment by other working example. Although the main part 60 of attachment is the same as the above mentioned main part 22 of attachment, it is provided with the hole 62 of the smaller diameter which has the removal zone 64 which is adapted for a sudden angle or bend in the tubular nozzle 12 of the air polish device 14. The zone 64 of the shape of a cup for removal accepts the bending part or angled part of a tubular nozzle, and prevents the rotation of the main part 60 of attachment to the nozzle 12. furthermore, by pushing into the tubular nozzle 12 until the cup-like side of the removal zone 64 engages with the bending part of the nozzle 12, the main part 60 of attachment fixes parts mutually, or reliance obtains it -- \*\* Thus, it is fixed to the regular position to the nozzle 12, and the main part 60 of attachment fixes the end 54 of the nozzle 12 to a predetermined distance from the edge part of the flexibility skirt-board-like portion 24.

According to other working example of this invention, Fig. 6 shows the main part 70 of attachment used for the tubular nozzle 72 with the shoulder 74. The main part 70 of attachment is provided with the edge 76 for inner which forms a stop when it engages with the shoulder 74 of the nozzle 72. The common-law marriage part 78 of the main part 70 of attachment can be made into the size which becomes eye \*\*\*\*\* into the portion 80 of the still smaller diameter of the nozzle 72. The hole 82 of the main part 70 of attachment can be similarly made into the size which becomes eye \*\*\*\*\* into the portion 84 of the still larger diameter of the nozzle 72. With



this structure, it is \*\*\*\*\* carried out to the nozzle 72, airtight fit \*\*\*\* is obtained, and the main part 70 of suction attachment has a specific relation which can insert the main part 70 of suction attachment in a lengthwise direction at the nozzle 72 with a shoulder.

Other working example of the stop mechanism in which the main part of attachment is positioned to the nozzle 12 is shown in Fig. 7. In Fig. 7, the collar 90 constituted from a plastic or other suitable materials has formed the hole 92 in which the tubular nozzle 12 is accepted. The cavity hole 94 with a female screw is formed in the collar 90 so that the setscrew 96 may be received. It uses for the setscrew 96 fixing the collar 90 to the nozzle 12. Thus, the main part 22 of attachment as shown in Fig. 1 and Fig. 2 can make the fitting collar 90 engage with the nozzle 12. Thus, the surface which is going to grind the air friction device 14 is kept from the siphon 12 being extruded through the hole 34 of the smaller diameter of the suction attachment 10 at the time of pressing \*\*\*\*.

Various working example which shows the principle and concept of this invention above was described. The suction attachment of this invention is economically made from a plastic or other suitable materials, and its this invention device is cheap and it has been made to be made into throwing away. The same way, the flexibility skirt-board-like portion 24 is also constituted economically and is considered to be made to throwing away. With suction attachment, a flexibility skirt-board-like portion is used by the single patient, ranks second and can be discarded. Although suction attachment is sterilized or being cleaned in this transformation, it discards using a flexibility skirt-board-like portion once, and attaches to the suction attachment which sterilized a new skirt-board-like portion again. Suction attachment is made to a flexibility skirt-board-like portion and one from a suitable material, and it forms in them as a unit of one with it so that still more clearly [ a person skilled in the art ]. The main part of attachment of this invention is made as an integral part of a polish device nozzle so that clearly [ a person skilled in the art ], and only a flexibility skirt-board-like portion becomes disposable parts in this case. The air polish device has made the suction groove of one connected with an annular sucking room through a nozzle from this transformation in this device without using the external siphon shown in Fig. 1, and the hose which collaborates for this device. The internal annular groove which receives in the main part of attachment o ring which seals this unit for a nozzle can be formed.

The aerosol recovery assembly indicated to the method and device which control the aerosol cover finally produced with U.S. Pat. No. 07 / 900,617 No. Description "ultrasonic device dated June 18, 1992" can be used in favor of this invention. Although the abrasives polish device described by this explanation reduces most aerosol contaminants, a little abrasives are lost by the irregular part of a tooth flank, or the crevice between interdental. The aerosol recovery assembly of a cross-reference-to-related-application Description can be attached to the handle of an abrasives polish device again so that it may supplement with the aerosol of the blood or the saliva generated with a little abrasives escaped from a flexibility skirt portion. The combination of an abrasives polish device and an aerosol recovery assembly all loses the contaminant which floats in the air to generate in practice. The siphon 26 can be attached to the main part of a recovery assembly cylindrical shape which absorbs abrasives powder and other contaminants from a service level when using for an aerosol recovery assembly this invention furthermore described above. The necessity for a separate suction hose is lost by this structure.

That is, this invention is preferred, and although other working example was described about a specific structure and function, it is needless to say [ this invention ] that various change transformation can be performed without deviating from the pneuma.

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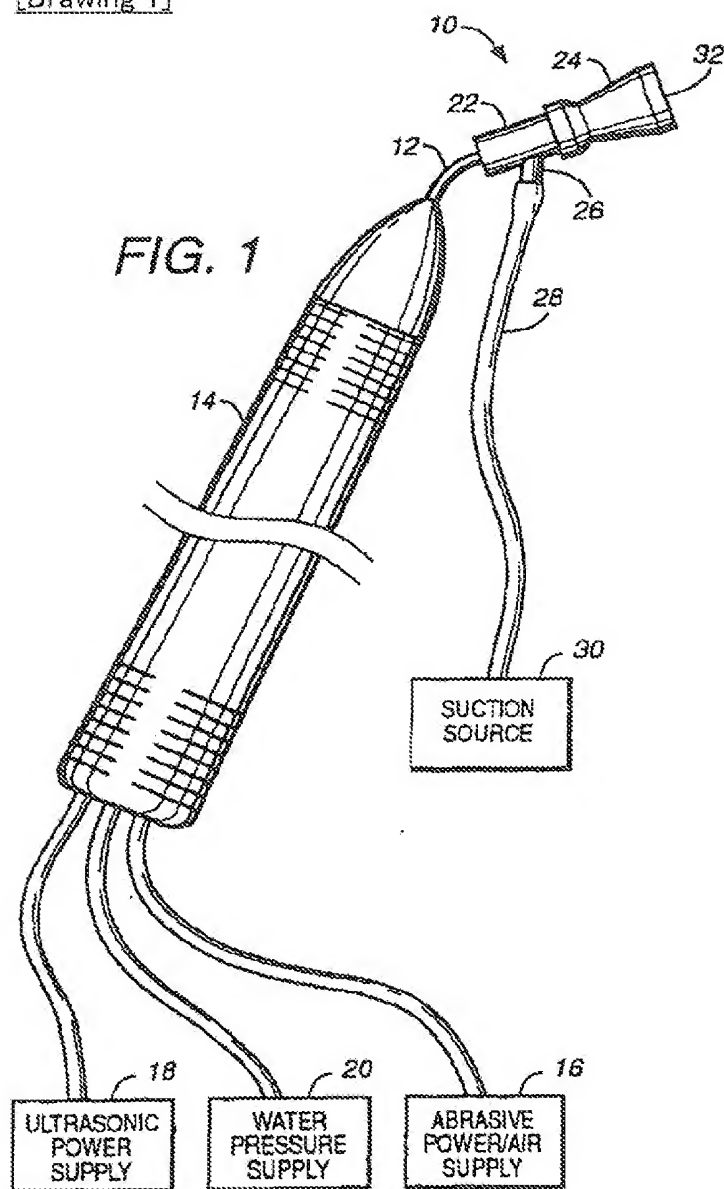
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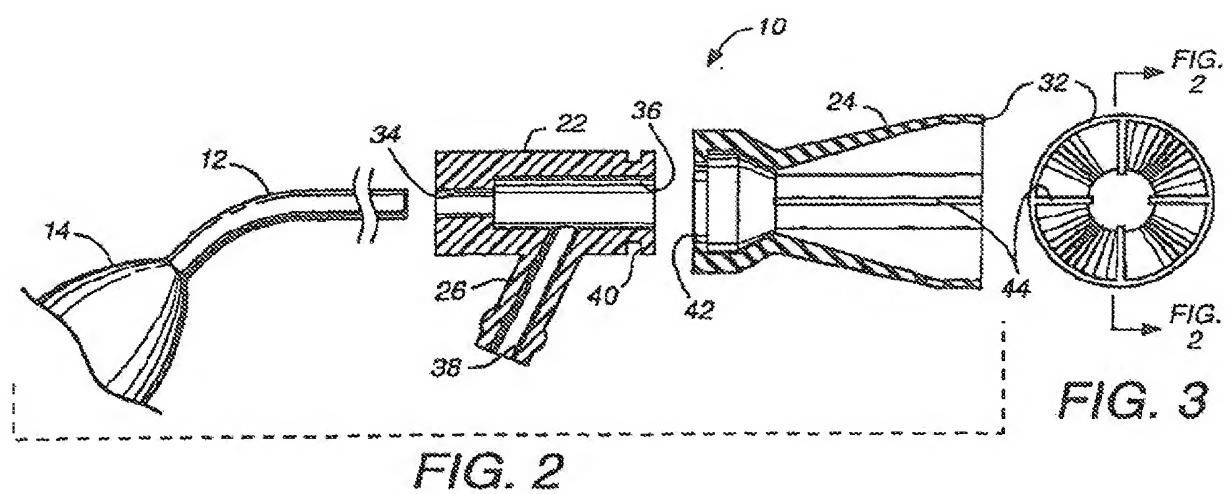
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DRAWINGS

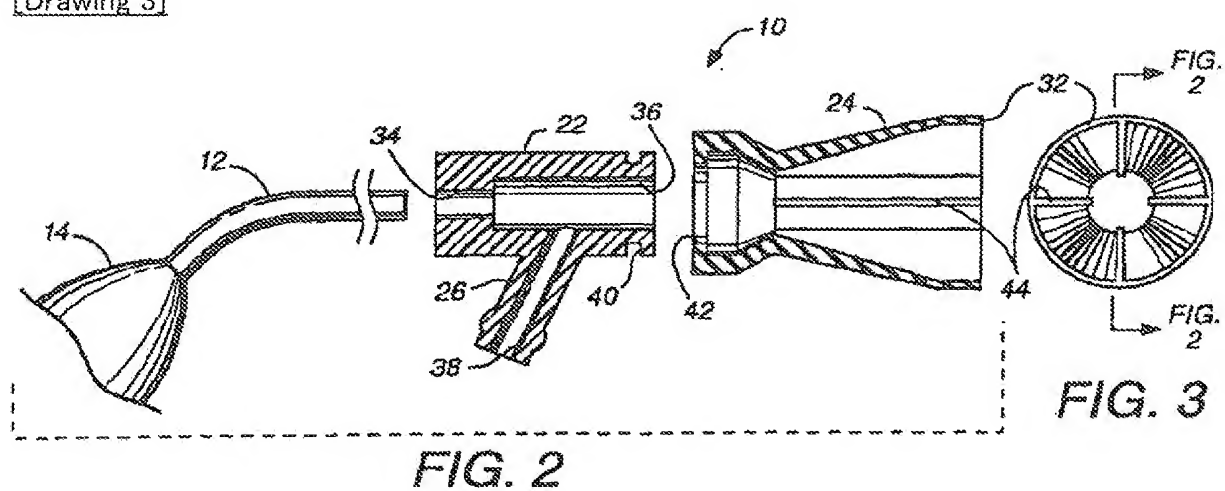
[Drawing 1]



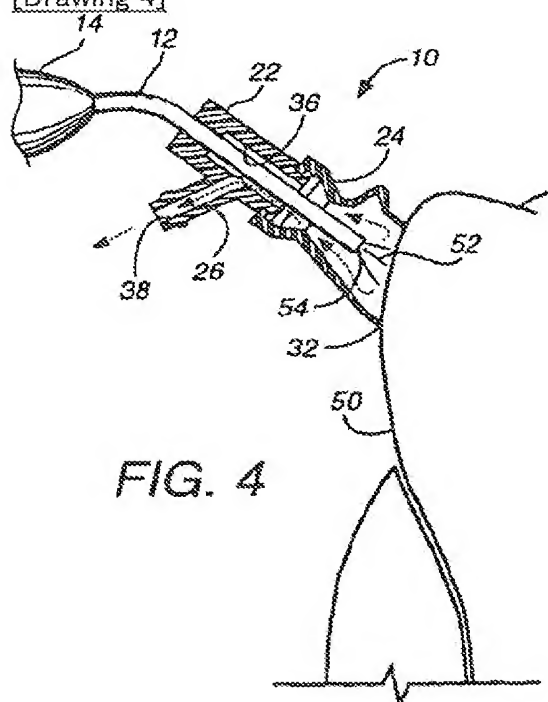
[Drawing 2]



[Drawing 3]



[Drawing 4]



[Drawing 5]

FIG. 5A

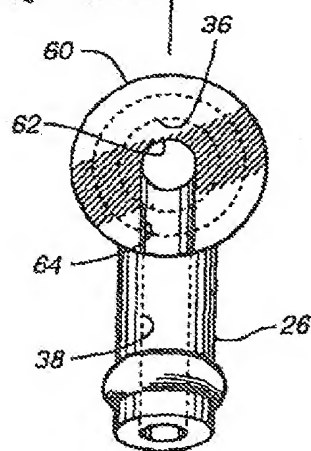


FIG. 5B

FIG. 5A

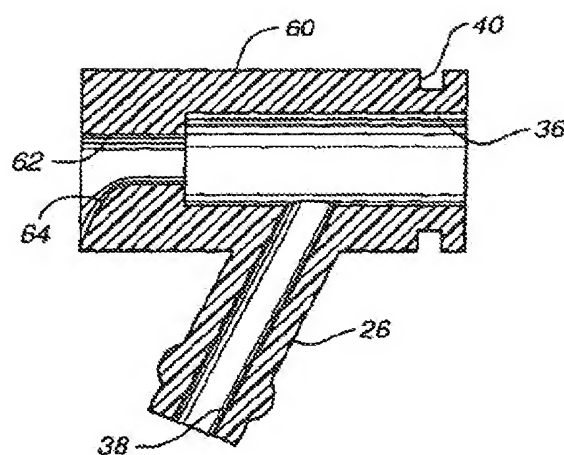


FIG. 5B

[Drawing 6]

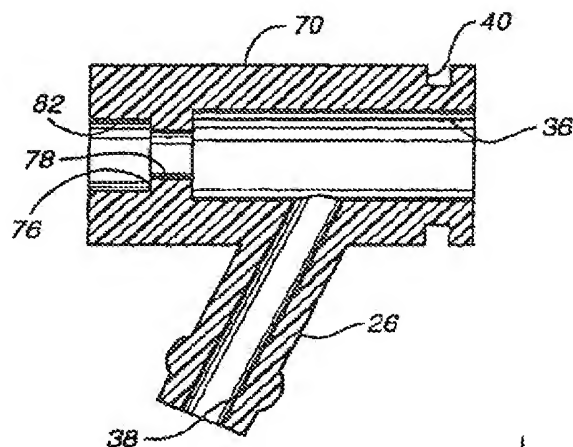
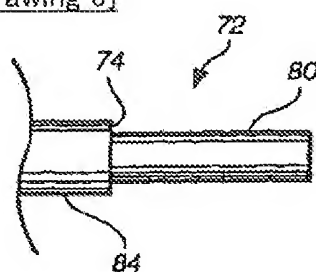


FIG. 6

[Drawing 7]

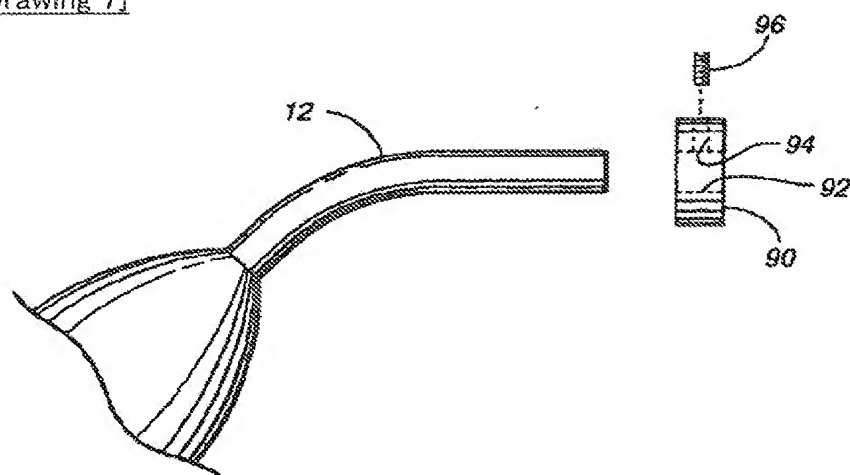


FIG. 7



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[Translation done.]